

Wienke Strathern, Moritz Issig, Jürgen Pfeffer September 2020

Abstract

The anonymization of qualitative interview data is of high importance. For the purpose of secondary use of data, anonymized data is essential. While automated processes in anonymization tasks are becoming more and more common, we provide a tool that keeps researcher in control of their data. Automated decisions give all-in-one solutions, but studying qualitative interview data depends on the needs of every single researcher. We provide a tool that enables researcher to make individual decisions with the information needed, on the level required. In this report, we propose a solution to anonymize qualitative interview data with the purpose to create own coding schemes and individual abstraction levels. We built a tool that assists in working with textual interview data. By using the tool, processes can be optimized and important information can be obtained at the same time.

Index Terms: anonymization, qualitative social science interview data, text analysis

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Chapter 1

Technical Report

1.1 Motivation

The database of scientific research data centres is often qualitative social science data. These are currently available mostly as transcripts. In order to make this data accessible for secondary research, the personal and person-related data must be anonymized. The process of anonymizing qualitative data is costly and complex. In order to facilitate the work of primary researchers, the anonymisation tool was developed to allow for a a feasible anonymization process. Therefore, the original documents are available to secondary users in an anonymized version. The anonymization process refers to flexible rules that meet the respective requirements of the secondary researcher. One objective is to control and implement the application of the rules to the original documents and the construction of the documents to be published. Furthermore, the tool should facilitate the anonymization of qualitative research data (mainly transcripts) by providing protective measures for the anonymisation of qualitative interview data - so that this data can be used for secondary purposes. The data should remain researchable (information relevant to the social sciences, such as the size of a site or the general concept of a disease) or be reopened for specific research questions, that is flexible anonymization.

1.1.1 Objectives

One of the objective is to develop a tool that intuitively assists in text editing processes without making automated decisions. Researchers are in control to determine the objects and the degree of anonymization. Information can be extracted and changed by their meaning for the researcher. The framework should allow for an appropriate level of anonymity whilst trying to maintain maximum meaningful information in the research data.

1.1.2 Contributions

- We build a tool with an easy to use interface that assists in the anonymization process of interview data.
- We provide a framework with which entities from text can be extracted.

1.1.3 Outline

This work is structured as follows. In a first step information about the secondary use of interview data is provided. For the purpose of secondary use anonymization characteristics will be defined. To approach different levels of abstraction during anonymization we refer methodologically to information extraction and provide our framework. This is followed by the code documentation. The technical report ends with some closing remarks. Chapter 2 contains the tool manual in which all steps are shown in detail with screenshots and example text. We have selected three different interview types to illustrate the functions of the tool step by step.

1.2 Background

1.2.1 Secondary Use of Interview Data

The concept of qualitative longitudinal data archives to conduct qualitative secondary analysis has been broadley discussed [9] [5]. Referring to the conceptual elaboration from a project of the University of Leeds [1] it is important to reach an appropriate level of anonymity, whilst trying to maintain maximum meaningful information in the research data. Information should not be crudely removed or blanked-out, but rather pseudonyms, replacement terms or vaguer descriptors should be used. Some data that combine many difficult features: geographically specific references, sensitive and potentially harmful content, longitudinal detail that increase disclosiveness, will be difficult or impossible to anonymize in a manner that both protects the quality of the data and the confidentiality of participants. Other strategies will be necessary for such data, for example, the anonymization of a small subset of data for illustrative purposes and might be highly valuable for methodological insights. It can be summarized that the objective for all data is to achieve a reasonable level of anonymization which is then combined with other strategies, namely consent agreements and access controls, in order to maintain confidentiality.

1.2.2 Anonymization of Interview Data

1.2.2.1 Objects of Anonymization

Objects of anonymization are personal and person-related features, Personal names, place names, street names, federal states, institutions and organizations (e.g. companies, schools, institutes), professions, titles and educational qualifications, age, times/calendar dates, pictures and voices. Furthermore, indirect, but specific contextual information. Characteristics of the subjects as well as those of third parties mentioned in the interviews (also the personal rights of the interviewees, transcribers, etc. must be taken into account). Sensitive information are information on ethnic origin, political opinion, religious or philosophical beliefs, trade union membership, health or sex life.

1.2.2.2 Degree of Anonymization

The degree of anonymization refers to the level of abstraction. A **strong abstraction** means that features are deleted. If so, they must at least be replaced by placeholders. In this simplest form of anonymization, a strong abstraction of the original information

is achieved. **Pseudonym** refers to renaming people, objects etc. A third way of making research data anonymous is **aggregation**. That means to coarsen or aggregate information by creating classes or categories. This includes, for example, replacing the concrete age with age classes, replacing the concrete employer with the industry or company size class, and replacing a specific girl's name with student. Another way to make the information anonymous is to **replace** it with information that includes the meaning for and relationship with the researcher. People can be described by their meaning for the researcher, for example, girlfriend, mother, teacher. Place names can be paraphrased based on the meaning of the place to the subject, such as birthplace, place of residence, place of work. Country name, depending on the research context, such as country with high youth unemployment or welfare state.

1.3 Framework

1.3.1 Information extraction

To approach different levels of abstraction regarding interview texts, we ask the following questions: Which categories of information, parts of a text are needed to understand content, intention, associations, relations that can be replaced, thus anonymized. Therefore, we distinguish the level of abstraction by the degree of information that can easily still be obtained. To obtain the required information coding schemes with categories can be applied. This is a central aspect of quantitative text analysis [7][4]. Building a taxonomy of quantitative text analysis techniques is based on two types, instrumental schemes categorize tokens in a text corpus according to theoretical or conceptually-driven frameworks (sentiment analysis based on affect control theory or narrative analyses based on story grammars). Representational schemes, on the other hand, are data-driven schemes (open schemes) that categorize tokens according to simple semantic relations such as synonymy, meronymy, hypernomy, or hyponymy [6]. To build coding schemes for text, we ask the five W's of journalism - the who, what, where, when, why, and how of things. This kind of content analysis requires entity extraction and ontologically categorized entities [8][2][3].

1.3.2 Implementation

For the anonymization of objects in interview data we built a **category** scheme. This is the core element of this tool. These nine categories are intended as default categories for anonymization: Person, location, Institution, Profession, Personal Circumstances, Time, Education, Other. Standardised lists for places, diseases and professions can be applied. Thus, the researcher has the possibility to use standardized information. The **degree of anonymization** refers to the labels in the category scheme: pseudonym, aggregation of information by applying classes or replacing text by adding descriptions or attributions. A category refers to the overall entity. A pseudonym replaces names and makes it easier to read and follow interviews where many different friends or siblings are mentioned. Aggregating information is more convenient for obtaining just the information. Whereas paraphrasing enables to reflect the own analysis. Furthermore, categories can be edited in a flexible way. Categories can be re-used and are saved as XML-files. They can be edited and be part of the publication. Information in the interviews can be replaced by these categories, changed or paraphrased, depending on the researchers interest for secondary

use of data. Further core elements of this tool are the option to design individual categories and labels. The replacement scheme is visible at any time. Identical text passages can be marked with different labels. And different text passages can be marked with the same labels. The replacements are stored individually at the corresponding text passages and not globally. Encoded saving to new text can be applied. Exported categories and text can be part of publications and can be shared within the community. The table for replacements includes the originals, the category, pseudonym, replacement and the number of occurrence and can be exported for a first analysis. Codes of different interviews can be compared.

1.4 Code Documentation

1.4.1 Used technologies and libraries

1.4.1.1 Maven

Maven is used to manage the various libraries of the program. Maven makes it easy to add different libraries via the pom.xml file. Maven also builds the final jar file.

1.4.1.2 Libraries

- JavaFX is used to create the graphical user interface (GUI). JavaFX uses among other things fxml.files, which serve as the basic framework for the GUI. Each window has its own fxml.file, which communicates with the rest of the program via a controller object. SceneBuilder was used for visual editing of the fxml.files. SceneBuilder was used for visual editing of the fxml.files. Furthermore, JavaFX allows the use of CSS stylesheets to change the interface design. CSS was hardly used in the program.
- RichTextFX extends the TextAreas of JavaFX and makes it possible to highlight text sections in such a TextArea.

1.4.2 Class-Diagram

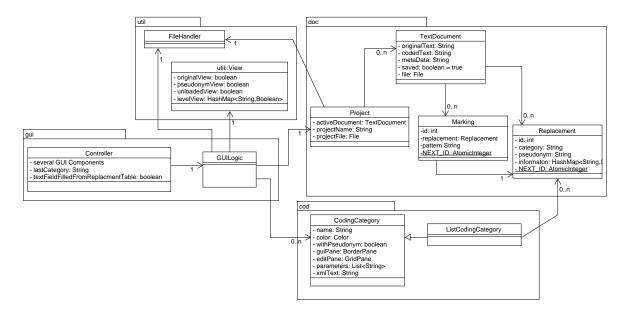


Figure 1.1: Class-Diagram reduced to Data-Objects and their Enitities

The program is divided into 4 packages as shown in Figure 1.1:

- 1. **gui:** In this package all classes are united, which take care of the interaction with and presentation on the GUI. This includes all controllers as well as GUILogic, which is a logic component that prepares the data for the GUI or prepares the input from The GUI for storage.
- 2. **util:** Different auxiliary classes are combined in this package. Thus the FileHandler takes care of the interaction with the operating system file system and a view object describes the view selected by the user.
- 3. **doc:** All classes that represent the structure of the opened documents are combined in this package. So an opened project has several documents, which in turn contain markings. Each of these markings will be replaced by a referenced replacement.
- 4. **cod:** To allow loading Projects independent of the encoding, the classes that contain the encoding categories are located separately from the doc-package in the cod-package. While CodingCategory represents a user-created category, a ListCodingCategory is created from a csv-list and has predefined replacements.

1.4.3 Text storage

To allow different views of the document text, the text is stored in two ways. First, the unchanged original text of the document is saved. On the other hand the coded text, in which the places to be replaced are replaced with the ID of the corresponding marker. Together with the lists of markings and replacements, a third text, called ExportText, can be created. This text is created dynamically depending on the selected view. Figure 1.2 shows an example of the differences in the different texts.

Original / Shown Text: Lorem ipsum dolor sit amet, consectetur adipisici elit, sed eiusmod tempor incidunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquid ex ea commodi consequat. Quis aute iure reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. ui officia deserunt mollit anim id est laborum. Excepteur sint obcaecat cupiditat non proident, sunt in culpa c Marking: <ld>9</ld> <replacement>8</replacement> <original>laboris</original> Coded Text: Lorem ipsum dolor sit amet, [7] adipisici elit, sed eiusmod tengor incidunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco [9] nisi ut aliquid ex ea commodi consequat. Quis aute iure 🔞 in voluptate velit esse cillum dolore eu fugiar nulla pariatur. Excepteur sint obcaecat cupiditat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. Marking: <ld>9</ld> <replacement>8</replacement> Replacement: <original>laboris</original> <ld>8</ld> <category>Location</category <Type>Region</Type> **Export Text:** <Size>Small</Size> Lorem ipsum dolor sit amet, [Type=Country] adipisici elit, sed viusmod tempor incidunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco [Type n; Size=Small] nisi ut aliquid ex ea commodi Gender=Diverse] in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Quis aute iure Excepteur sint obcaecat cupiditat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Figure 1.2: Text-Example for Original-, Coded- and Export-Text

1.4.4 GUI-Controller

This chapter lists which fxml files, which controllers are used in the code and which functions the windows have.

• mainGUI.fxml/Controller.java

- Main window
- The replacement table and file list are filled dynamically
- Dynamically created pane for the categories

• editMeta.fxml/ MetaController.java

- Allows the user to change the meta information of a document
- No dynamic GUI components

• exportFile.fxml/ ExportController.java

- Allows the user to export the currently selected document
- Choice of different levels for export
- The different levels are added dynamically

• loadCategoryList.fxml/ ListController.java

- Allows to select the desired labels for the new list category
- Divided into 4 pages
 - 1. Selection of the identifier
 - 2. Selection of a pseudonym (optional)
 - 3. Selection of labels
 - 4. Level assignment for the labels
- The selection options are created dynamically the frame is fixed in the fxml file
- Every time you turn the pages, the interface changes

• singleListMarker.fxml/ SingleListMarkController.java

- Allows to select a replacement from a loaded list
- Statically Built from the fxml file
- However, the table is filled dynamically during the search

• editCategories.fxml/ EditCategoriesController.java

- HelferObjekt: CodingCategoryGUIBuilder.java
- Except for the frame and the "+" tab, everything is created dynamically

1.5 Conclusion

We built a tool that assists in working with interview data. Our conceptual framework allows to reach an appropriate level of anonymity, whilst trying to maintain maximum meaningful information in the research data. Studying qualitative interview data depends on the needs of every single researcher. Deciding individually which information to anonymize was the main scope of this project.

Chapter 2

Tool Manual

2.1 Installation

To use the tool, the latest version of Java should be installed in advance: https://www.java.com/de/download/.

2.2 Starting the program

After downloading the tool, a double click on the jar file should be sufficient for execution. Otherwise the jar file can also be opened via the Jar Launcher.

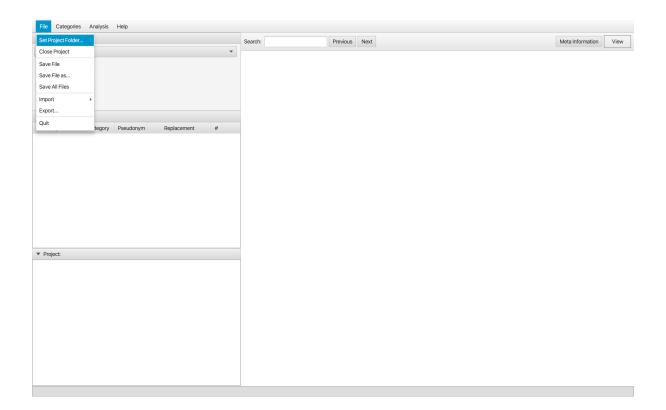


2.3 Work with existing projects

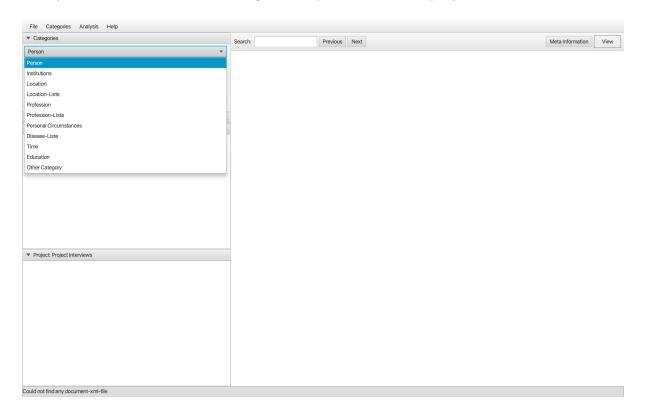
In this tool a project is equivalent to a folder on the computer. All interviews, but also all other files like files for categories and lists are stored in this folder. Therefore, the first step after starting the program is usually to define the project folder.

2.3.1 Set Project Folder

Clicking on File Set Project Folder, the folder in which the files are located is defined.

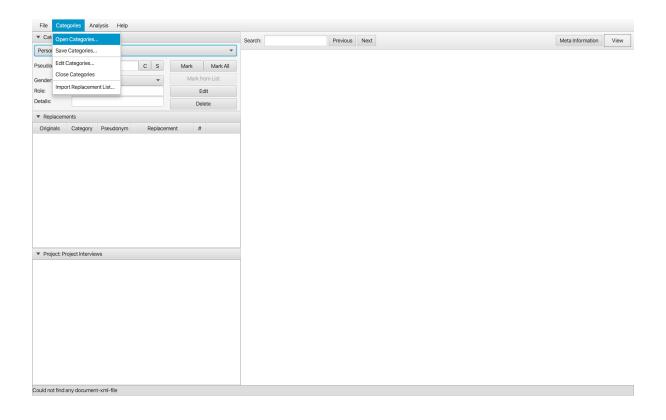


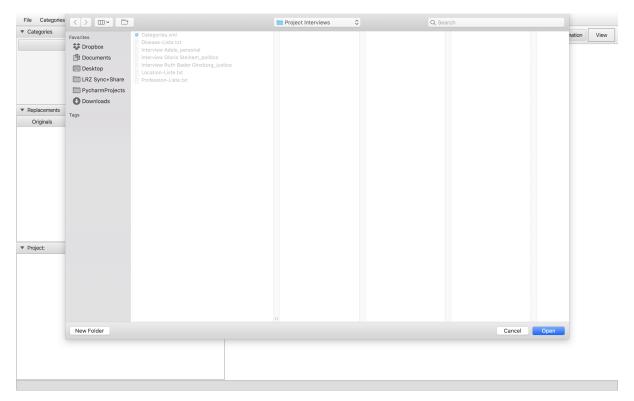
By default, there are nine categories imported from the project folder.



2.3.2 Import of categories

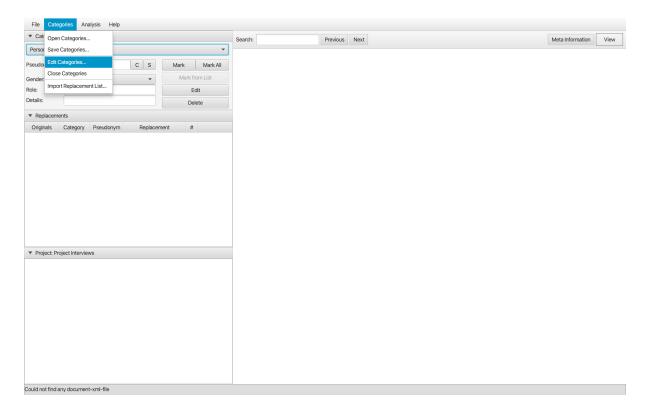
Categories can also be imported manually opening the Categories.xml.



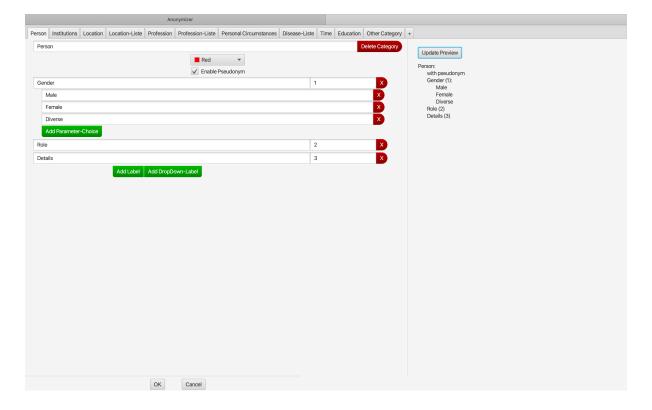


2.3.3 Editing categories

Categories can be edited. Working with the editor allows to build an own category scheme.

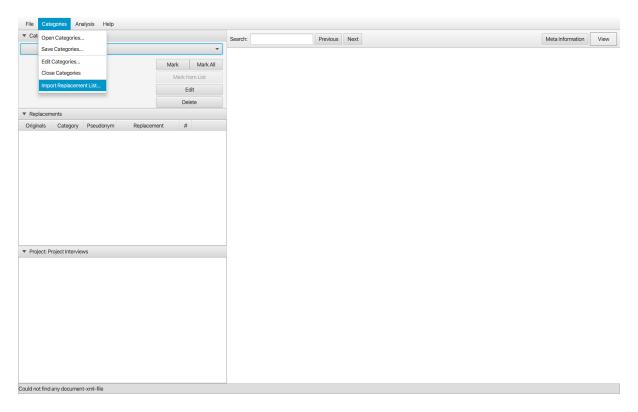


Categories and parameters can be added, edited or deleted. With a pseudonym names, places or events can be renamed. To coarsen or aggregate information classes can be build by adding new labels that refer to the inteded category. For anonymization purposes, information can be replaced that includes the meaning for and the relationship with the researcher.

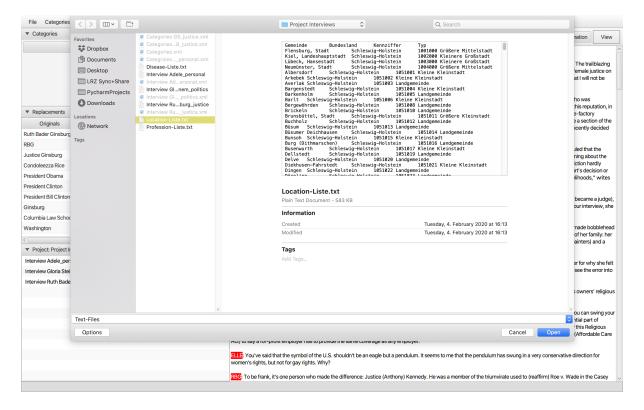


2.3.4 Import of lists

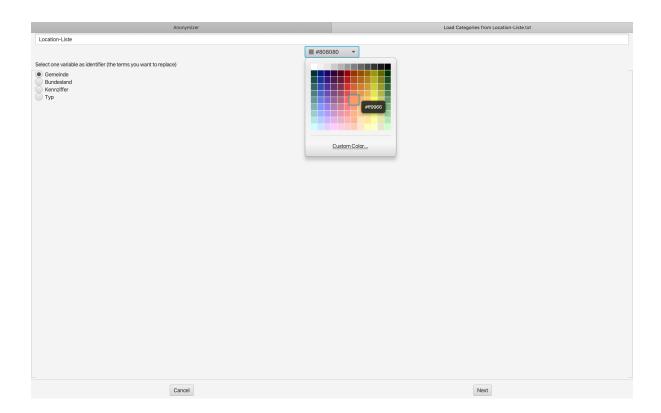
Importing lists allows to enrich replacements with standardised information.



There are three lists by default: Disease, Location and Profession.

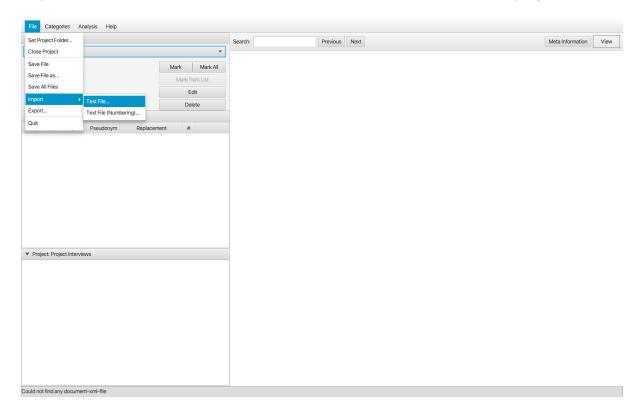


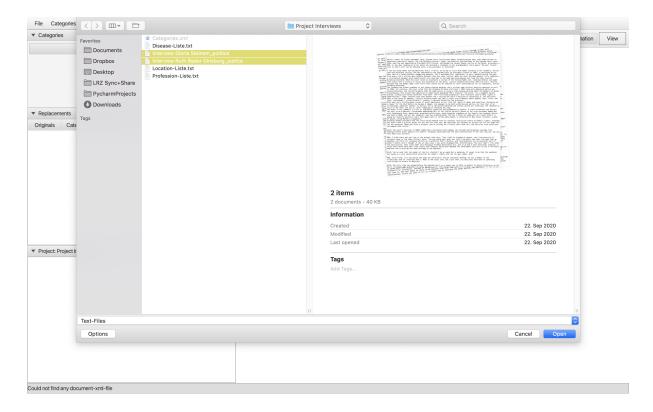
When opening the Location txt-file, select the variable as identifier to define which information from a column of the list is needed and choose a colour.



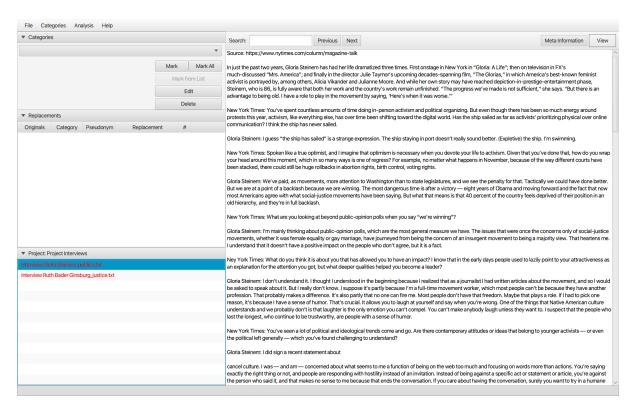
2.3.5 Import of text files

Import one or several interviews or other text data as txt-files from the project folder.





The txt-files titles appear subdivided in Projects, marked red, which means they are still unsaved. Clicking on the project, the text appears in the text editor field.

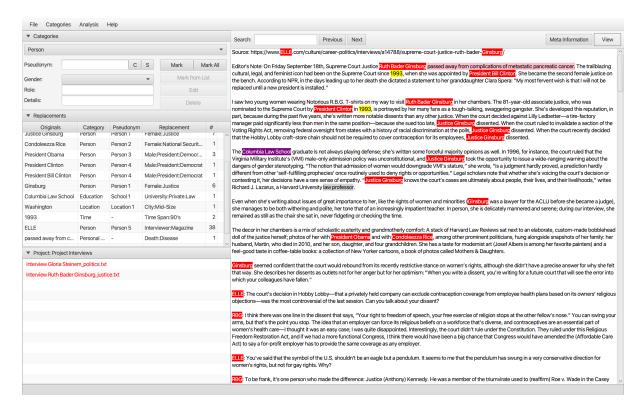


2.4 Working with interviews

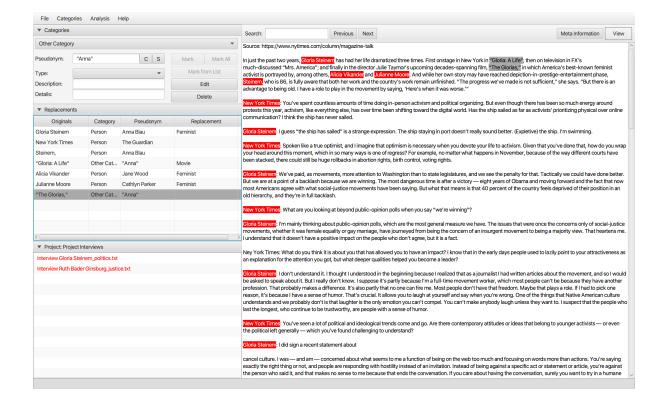
2.4.1 Marking text

After defining the respective categories and importing the interviews as txt-files, words or passages of text can be marked. Simply click on the word to be anonymized and mark it by moving the arrow to the end. Use the category drop-down to get to the respective category. Whenever text is marked and assigned to a category, it appears in the replacement table. To use this data for secondary analysis, the anonymization steps are the following: for the purpose of this interview with Ruth Bader Ginsburg information should be aggregated by using the default categories and classes. Person is to be anonymized and we replace it just with information such as gender and role. It's Category - Person - Pseudonym would be Person1, that can be counted with the fill in button C and fortlaufend S and mark the respective person once or all. A subcategory or class is gender and the person is given a replacement, here Justice.

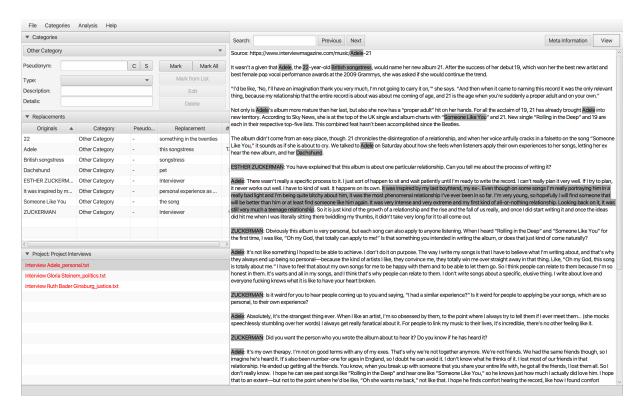
In this way several information in the interview regarding person, education profession, location, time and personal circumstances can be anonymized. If there are changes to be made for already marked texts, simply click on Edit, add or edit information and click on Edit again to save the changes.



For the purpose of the next interview with Gloria Steinem, places, persons and events are given a pseudonym, hence are being renamed. Gloria Steinem becomes Anna Blau, a movie is renamed accordingly and other persons are given different names. In this way the readability of a text for secondary analysis can be obtained.

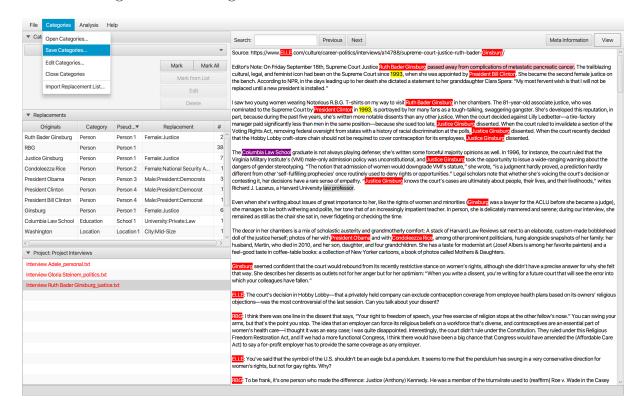


For the purpose of this interview with Adele originals in the text were replaced. And since this refers strongly to the researchers own meaning, the category Other was chosen to replace information with the meaning of the researchers interest and relationship. Adele is becoming a songstress, the Dachshund is just a pet, parts of her intimate relationship are being marked and replaced with personal experience.

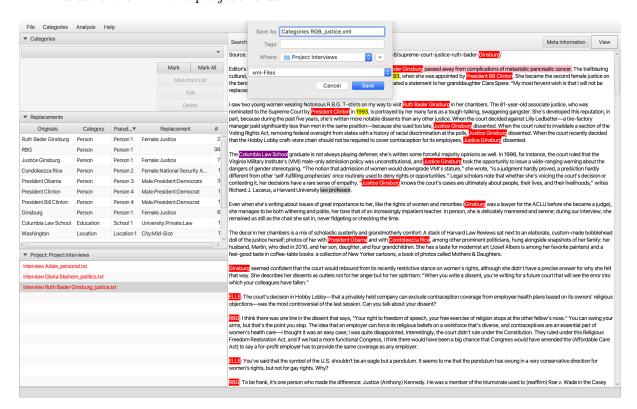


2.4.2 Save categories

The default categories only need to be saved if they have been changed using the editor. Click on Categories Save Categories.



And save them in the project folder.

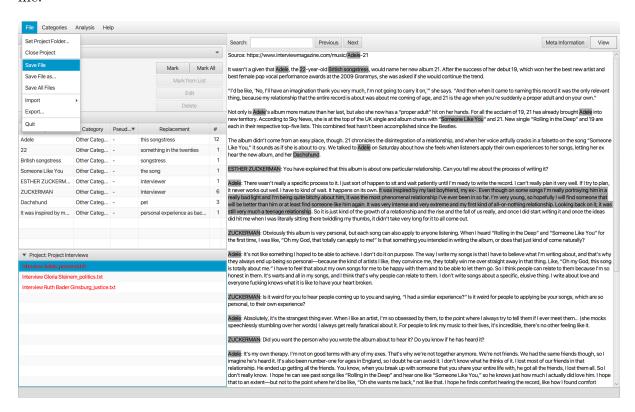


The categories can be reopened as xml-file in a text editor.

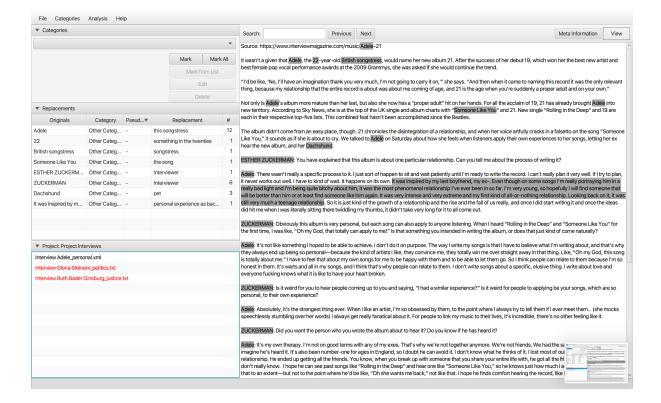
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| Total Compose Securities | Total Contempose | Total Contempose Securities | Total Contempose S
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2.4.3 Save files

The interview texts are saved as text files. It can be saved one file, all files or as a different file.

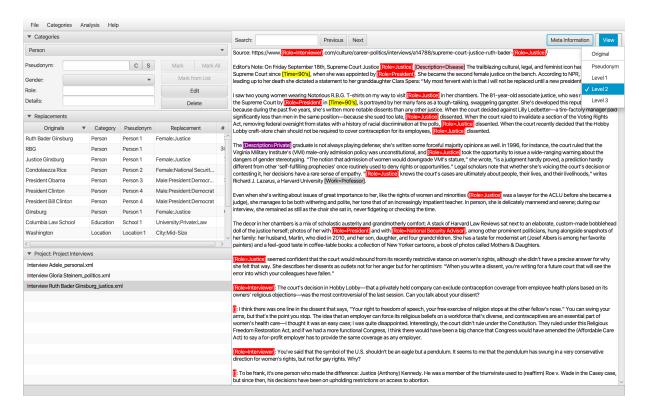


When the file is saved it is marked grey.

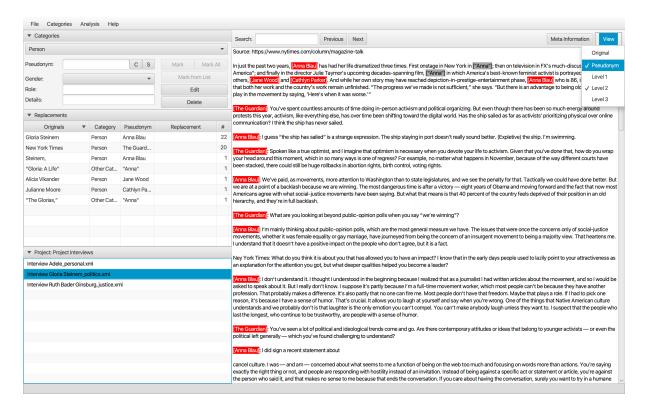


2.4.4 View

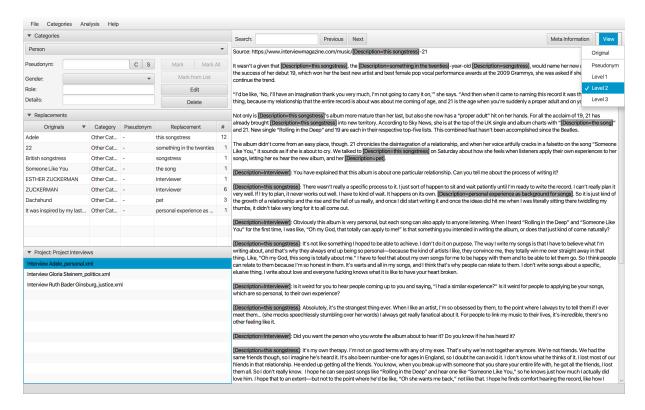
Clicking on View enables to see the different anonymizations in the text. Different combinations of abstraction are possible. For anonymization purposes of the interview with Ruth Bader Ginsburg Level2 - the replacements - is chosen to see the different labels that were assigned.



For the interview with Gloria Steinem the Pseudonym as anonymization was chosen. So, in View the Pseudonym is chosen and in the text the renamed persons and events are anonymized.

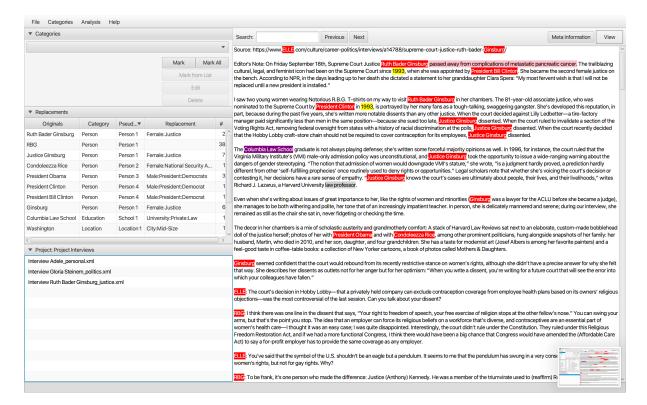


In Adeles interview again Level2 - replacements - is chosen.

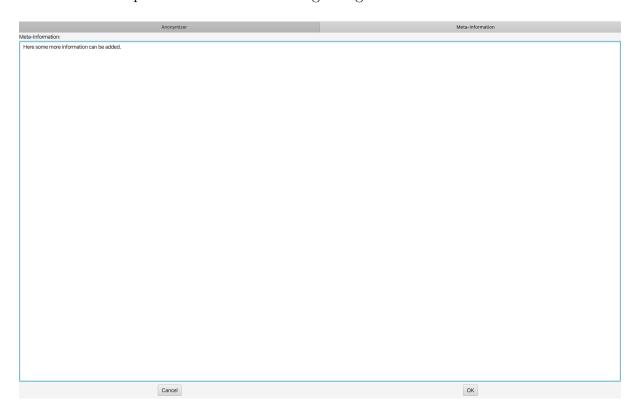


2.4.5 Meta information

Information about the interviews can be added by clicking on Meta Information on the top right side.

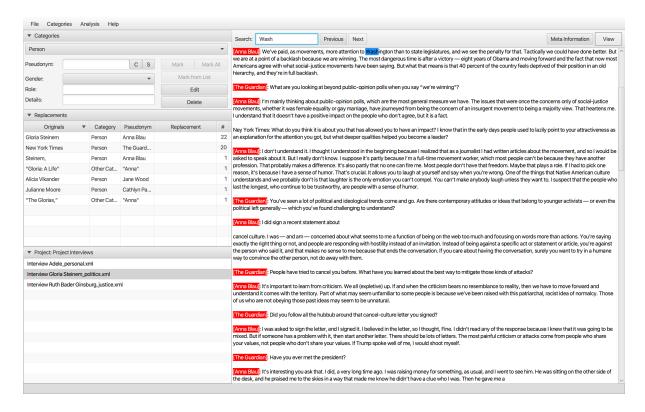


A text field opens where information regarding the interviews can be added.



2.4.6 Search

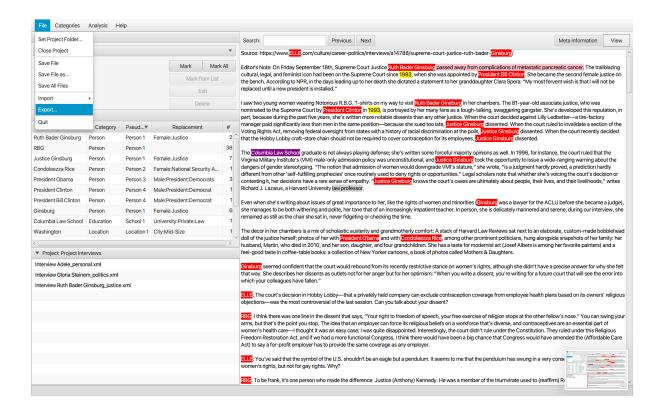
With the search function a specific word can be searched.



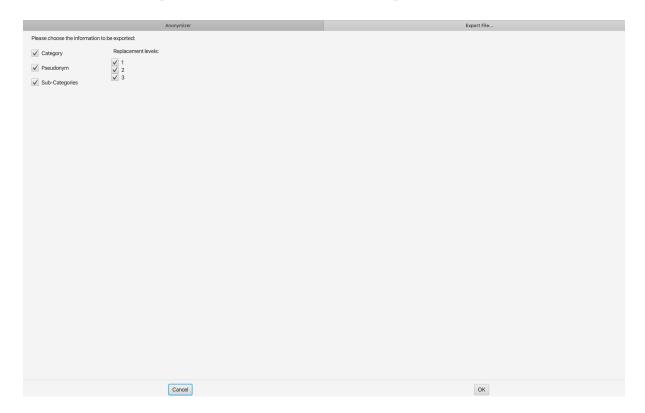
2.5 Export

2.5.1 Exporting text files

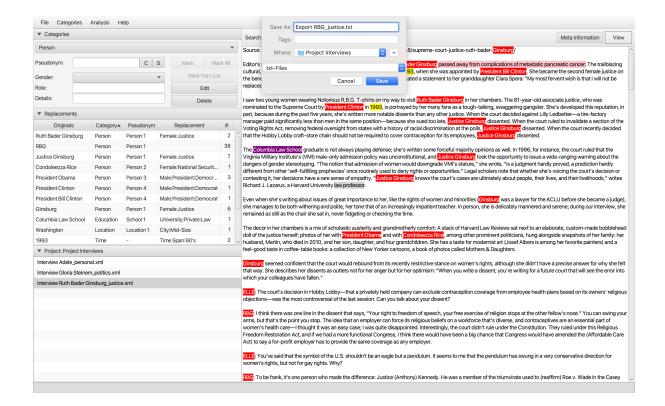
Exporting text files enables archiving anonymized interviews for secondary analysis. Comparisons of anonymizations can be done across different interviews. When exporting the files, the connections to the original interview will be lost.



A new window opens and the information to be exported can be chosen.



Now it is saved in the Project Folder and can be used for other purposes such as publications or sharing schemes.



This text file contains only the anonymizations.

Source: https://www.[Person | Person 5 | Role=Interviewer | Details=Magazine].com/culture/career-politics/interviews/a14788/supreme_court_justice_ruth_bader_[Person | Person 1 | Role=Justice | Gender=Female]/

Editor's Note: On Friday September 18th, Supreme Court Justice [Person | Person 1 | Role=Justice | Gender=Female] [Personal Circumstances | Type=Death | Description=Disease] The trailblazing cultural, legal, and feminist icon had been on the Supreme Court since [Time | Type=Time Span | Time=98's], when she was appointed by [Person | Person 4 | Role=President | Details=Democrat | Gender=Male]. She became the second female justice on the bench. According to NPR, in the days leading up to her death she dictated a statement to her granddaughter Clara Specia: "My most fervent wish is that I will not be replaced until a new president is installed."

I saw two young women wearing Notorious R.B.G. T-shirts on my way to visit [Person | Person 1 | Role=Justice | Gender=Female] in her chambers. The 81-year-old associate justice, who was nominated to the Supreme Court by [Person | Person 4 | Role=President | Details=Democrat | Gender=Male] in [Time | Type=Time Span | Time=90°s], is portrayed by her many fans as a tough-talking, swaggering gangster. She's developed this reputation, in part, because during the past five years, she's written more note and any other justice. When the court decided against Lilly Ledbeter=- a time-factory manager paid significantly less than men in the same position-because she sued too late, [Person | Person 1 | Role=Justice | Gender=Female] dissented. When the court ruled to invalidate a section of the Voting Rights Act, removing federal oversight from states with a history of racial disc. [Person of the Polis, [Person | Person 1 | Role=Justice | Gender=Female] dissented. When the court recently decided that the Hobby Lobby craft-store chain should not be required to cover contraception for its employees, [Person | Person 1 | Role=Justice | Gender=Female] dissented.

The [Education | School 1 | Type=University | Description=Private | Details=Law| graduate is not always playing <u>defense</u>; she's written some forceful majority opinions as well. In 1996, for instance, the court ruled that the Virginia Military Institute's (WI) male—only admission policy was unconstitutional, and [Person | Person 1 | Role=Justice | Gender=Female| took the opportunity to issue a wide—other 'self-fulfilling reponeties' once routinely used to demy rights or opportunities." Legal scholars note that whether she's voticing the court's decision or contesting it, her decisions have a rare sense of empathy. "[Person | Person | Role=Justice | Gender=Female| knows the court's cases are ultimately about people, their lives, and their livelihoods," writes Richard J. Lazarus, a Harvard University [Portession | Portession |

Even when she's writing about issues of great importance to her, like the rights of women and minorities ([Person | Person 1 | Role=Justice | Gender=Female] was a lawyer for the ACLU before she became a judge), she manages to be both withering and polite, her tone that of an increasingly impatient teacher. In person, she is delicately mannered and serene; during our interview, she remained as still as the chair she sat in, never fidgeting or checking the time.

The decor in her chambers is a mix of scholastic austerity and grandmotherly confort: A stack of Harvard Law Reviews sat next to an elaborate, custom-made bobblehead doll of the justice herself; photos of her with [Person] Person 3 | Role=President | Details=Democrats | Gender=Male| and with [Person] Person 2 | Role=National Security Advisor | Details=Republican | Gender=Female|, among other prominent politicians, hung alongside snapshots of her family: her husband, Martin, who died in 2010, and her son, daughter, and four grandchildren. She has a taste for modernist art (Josef Albers is among her famoriate, painters) and a feel-good taste in coffee-table books: a collection of New Yorker cartoons, a book of photos called Mothers 6 Daughters.

[Person | Person 1 | Role=Justice | Gender=Female] seemed confident that the court would rebound from its recently restrictive stance on women's rights, although she didn't have a precise answer for why she felt that way. She deadscribes her dissents as outlets not for her anger but for her optimism: "When you write a dissent, you're writing for a future court that will see the error into which your rolleanues have failen."

[Person | Person 5 | Role=Interviewer | Details=Magazine]: The court's decision in Hobby Lobby that a privately held company can exclude contraception coverage from employee health plans based on its owners' religious objections—was the most controversial of the last session. Can you talk about your data.

[Person | Person 1]: I think there was one line in the dissent that says, "Your right to freedom of speech, your free exercise of religion stops at the other fellow's nose." You can swing your arms, that's the point you stop. The idea that an employer can force its religious beliefs on a workforce that's diverse, and contraceptives are an essential part of women's health care—I thought it was an easy case; I was quite disappointed. Interestingly, the court didn't rule under the Constitution. They ruled under this Religious Freedom Restoration Act, and if we had a more functional Congress, I think there would have been a big chance that Congress would have meaned the (Affordable Care Act) to say a for-profit temployer has to provide the same coverage as any employer.

[Person | Person 5 | Role-Interviewer | Details=Magazine]: You've said that the symbol of the U.S. shouldn't be an eagle but a pendulum. It seems to me that the pendulum has swung in a very conservative direction for vowene's rights, but not for gay rights. While

[Person | Person 1]: To be frank, it's one person who made the difference: Justice (Anthony) Kennedy. He was a member of the triumvirate used to (reaffirm) Roe v. Wade in the Casey case, but since then, his decisions have been on upholding restrictions on access to abortion.

[Person | Person 5 | Role=Interviewer | Details=Magazine]: The first time you argued before the Supreme Court as a lawyer was in 1973, on behalf of Sharon <u>Frontierg</u>, an Air Force Lieutenant who sued because under military rules she had to prove that her husband was "dependent" on her to get housing and medical benefits for him. (Servicemen, meanwhile, were automatically granted benefits for their wives.) Mant was it like to stand before the justices?

(Person | Person 1]: I had, I think, 12 minutes, or something like that, of argument. I was very nervous. It was an afternoon argument. I didn't dare eat lunch. There were many butterflies in my stomach, I had a very well-preapered opening assenter I had memorized. Looking at them.

thought, I'm talking to the most important court in the land, and they have to listen to me and that's my captive audience.

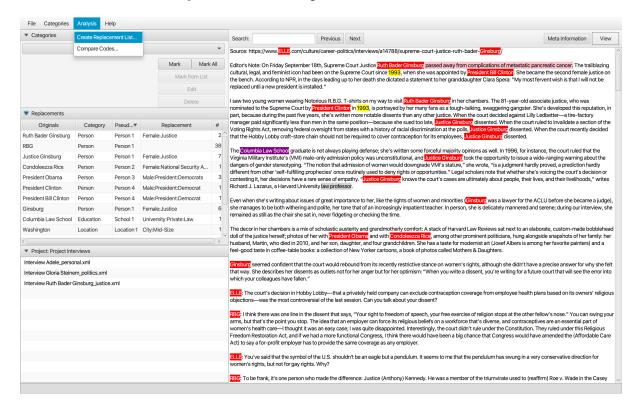
[Person | Person 5 | Role=Interviewer | Details=Magazine]: And then you relaxed?

Person | Person | 1: I fet! a sense of empowerment because I knew so much more about the case, the issue, than they did. So I relied on myself as kind of a teacher to get them to think about gender. Because most men of that age, they could understand race discrimination, but sex discrimination? They thought of themselves as good fathers and as good husbands, and if women are treated differently, the different treatent is beningly in women's fayor. To get them to understand that this supposed that this suppose that this suppose that the suppose the suppose that the suppose that the suppose that the suppose the suppose that the suppose that the suppose that the suppose that the suppose the suppose that the suppose that the suppose the suppose that the suppose the suppose that the suppose the suppose the suppose the suppose that the suppose the suppose the suppose the suppose that the suppose the sup

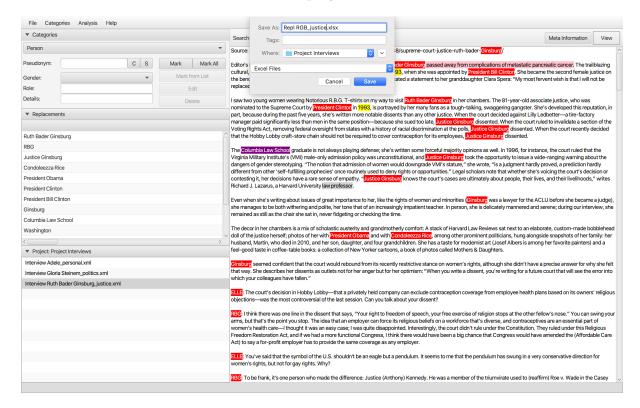
2.6 Analysis

2.6.1 Create replacement list

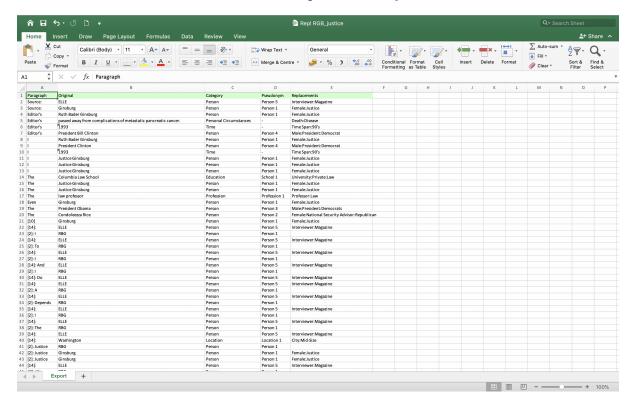
For an initial analysis, the anonymized information for each interview can be listed in an Excel file. Click on Analysis and Create Replacement List...



It can be saved as an Excel-file in the project folder.

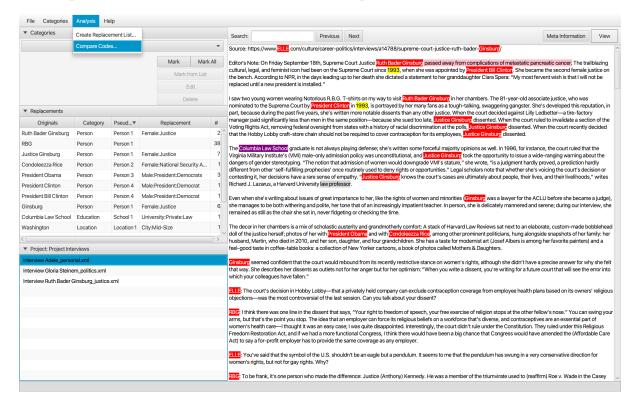


The file can be sorted, for example, by column, comparisons can be made if things have been coded similar or the same concepts differently.

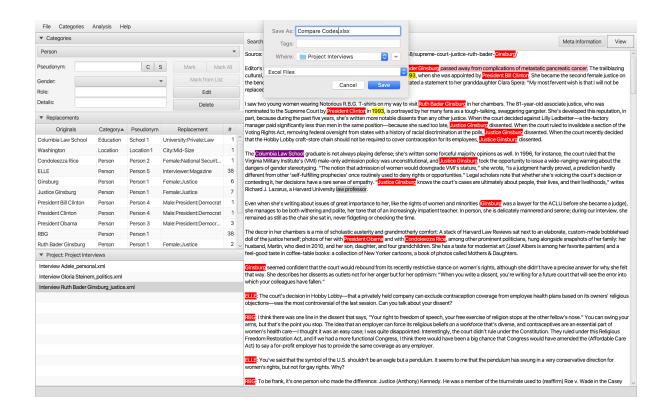


2.6.2 Comparing Codes

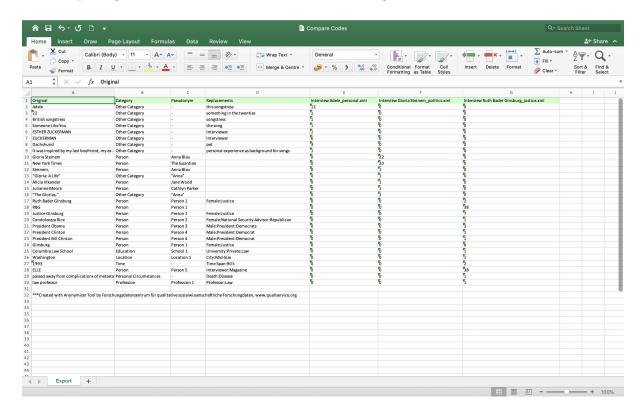
To compare codes across interviews, click on Compare Codes...



And save it as an excel-file in the project folder.



Comparing codes allows to see how often a coding occurs in which document.



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